Wall. ex Dc. var. *kurgensis* (Clarke) Noot., Rev. Sympl. 229. 1975.

Small tree, twigs sericeous. Leaves oblong to elliptic, 3-12.8 × 0.8-5 cm, acuminate, margins minutely spinous denticulate, base rounded or cuneate (on the same twig), young leaves sparsely pubescent both sides, older leaves glabrous except the midrib on the lower surface ; nerves 7-11 pairs, arched. Petioles 0.9-2 cm long, sericeous. Inflorescence in axillary spikes, 5-9.1 cm long, rachis densely tawny tomentose. Bracts 3 × 1.5 mm, deltoid, acute, densely tawny tomentose both sides, caducous ; bracteoles small, caducous. Flowers white, scented. Calyx 5 lobed ; tube glabrous, 1 mm long ; lobes 5, ovate, 2-3 × 1-2 mm, valvate, spathulate, tomentose without except the scarious margins. Corolla 5 lobed ; lobes 5-6 × 3 mm, oblong, obtuse, glabrous. Stamens 50-98, 3-5 mm long ; anthers basifixed, 2 lobed. Pistil 6 mm long, style cylindric, base broad and hirsute ; stigma capitate, disk 5 glandular. Fruits ovoid-cylindrical, 13-20 × 6-8 mm, stone with shallow lengthwise grooves, depressed at one side towards the base (description of fruit adopted from literature).

Specimens examined : INDIA : Kerala, Chandanathode, 710 m, 5-12-1967, *Ellis* 29476.

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25. HOST PARASITE RELATIONSHIPS IN *DENDROPHTHOE FALCATA* (LINN.F.) BETTINGH (*LORANTHUS LONGIFLORUS* DESR.)

A wide spectrum of host plants known for *Dendrophthoe falcata* (Linn.f.) Ettingh (Loranthaceae) seems to be quite unique in the whole angiospermic parasites. This fact has been substantiated by a large number of host plants reported so far for this taxon (Fischer 1926, Sambandam 1966, Sampathkumar and Kunchithapatham 1969, Sampathkumar 1970). It has also been pointed out earlier that although there existed no specificity in the selection of host plants for *D. falcata*, the selection of host plants was not entirely promiscuous since the seeds of the parasite could not establish successfully in some monocots and also a few dicots (Sampathkumar 1970) where they initially germinated but failed to establish later. One of the factors deciding the establishment of the parasite was thought to be osmotic pressure relationships between the host and the parasite (Sampathkumar 1970) for which experimental evidence presented in this paper lends support to this view.

The osmotic pressure relationships of the host as well as of the parasite in each case revealed in unambiguous terms that the parasite tends to have higher osmotic pressure than the host in question. Determination of osmotic pressure was made by plasmolytic method, using different molar concentrations of sucrose in which epidermal peelings of the leaves of

host and the parasite were immersed separately for 30 minutes. By using the formula OP = CRT (C = molar concentration ; R = gas constant = 0.082; and T = Absolute temperature = 273° + lab temperature) the osmotic pressures of the host and the parasite were determined. The osmotic pressure differences between the host and the parasite were calculated in terms of atmospheres. From the data presented in Table 1, it is evident that invariably in all the cases, there is higher osmotic pressure in the parasite, as compared with the host, the difference in the pressure being very low (4.87 atm.) to very high (22.27 atm.), depending upon the host. Another interesting conclusion emerging from the present study is that there exists a narrow range in the osmotic pressure of the parasites on different host plants, with an average OP of 32.14 atmospheres (range : 29.47 to 36.91 atm.). It is also likely that this difference might well represent cases of physiologically distinct strains.

TABLE 1

Name of the host	Osmotic pressure in atmospheres		
	Host	Parasite	Difference
Annona squamosa Linn. ..	15.38	30.80	15.42
Ficus religiosa Linn. ..	18.56	32.08	13.52
Cordia rothii R. & S. ..	8.38	30.65	22.27
Citrus aurantium Linn. ..	21.76	34.61	12.85
Mangifera indica Linn. ..	18.54	33.32	14.78
Mimusops hexandra Roxb. ..	15.35	30.75	15.40
Psidium guajava Linn. ..	12.34	33.32	20.98
Oncoba spinosa Linn. ..	16.90	36.91	20.01
Crescentia cujete Linn. ..	19.81	29.52	9.71
Punica granatum Linn. ..	24.60	29.47	4.87

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